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2

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POCKET COMPUTER NEWSLETTER

P.O. Box 232, Seymour, CT 06483

PRODUCT REVIEW
BUSINESS FINANCE PROGRAM PACKAGE

Produced by: Radio Shack for the TRS-80 Pocket Computer.
List price: $19.95
Availability: Many Radio Shack Computer Centers and some Radio Shack stores.

Overview

You get seven programs spread over two cassettes in this package. The programs are repeated on each side of the tapes. This is probably a good policy, judging from our experiences. A number of times we have had difficulty loading a program from one side of a tape, but have then been able to access the listing using the alternate recording.

You might also want to check your package while you are still at the store. The very first package we looked at had two identically labeled tapes inside. It should have contained two different tapes. Maybe we ran into a one-in-a-million case of mispackaging?

It has been our experience that loading of the tapes can be a little touchy in regards to the setting of the volume control. This has been observed whether using the recorder (Minisette 9) that Radio Shack recommends or a Minisette VI or a CTR-34, though the CTR-34 seems to do a much better job than the Minisette VI we tried.

You might as well know that the tape loading process is relatively slow. This is particularly so if you are used to working with disk systems! Taking into consideration the time it takes to set the computer into the cassette interface, locating the desired program on a tape, performing the load operation, etc., you can count on it taking five minutes or so to change programs in your machine. Now that is really not bad for such a tiny system, but it is easy to become impatient when you are accustomed to a much speedier loading process.

Accompanying the cassettes in this package is a slim manual that briefly explains how to run each program in the package. An example is provided for essentially each option provided in a program. Listings of the programs are not provided in the manual, but naturally, you can view these easily enough with the computer in the PRO mode if you are curious.

A brief synopsis of each program in the package follows.

Dates

The first program provided in the package provides calendar functions using the Gregorian calendar. You can determine the day of the week and the day of the year, as well as the number of days between dates, for any period between October 15, 1582 and February 28, 4000 A.D. (You should live so long, eh?)

This program, as well as others in the package, is designed to run with the computer in the DEF mode. This enables the various functions provided by the program to be accessed with just two keystrokes: the shift key and a selected reservable key.

The program is initialized by putting in a reference date by month, day and year. About 11 seconds later the program comes back to tell you the day of the week that this day occurs on. You can then press the ENTER key to obtain the day of the year.

Once the program has been initialized, you can type SHFT/S to determine the day of the week, day of the year and number of days until (before) a second date. It takes about 11 seconds for the first answer to appear. (You do not have to watch the display in anticipation. The program issues a couple of audible beeps when it has calculated information ready for you.)

You can give the program the number of days before an event occurs and it will tell you the date, day of the week and day of the year for that event. It takes about 20 seconds for the computer to come up with an answer for this type of problem.

You have 89 program steps left in memory when this program is installed.

Loans

You can use this program to find the true interest rate on a loan in about 19 seconds — after giving the original loan amount and payment information.

It takes just 8 seconds to tell you what your periodic payments will be on a loan.

You can also determine the amount of loan you can afford at a given payment rate. Or, you can find out the number of payments required to pay off a specific loan amount.

The program also tallies the total payments and total interest on loan repayment schedules.

We have found this a very handy program to have around. We blew the minds of a few local bankers with this little machine telling the money men the terms of

a loan before they could figure things out using their loan tables, etc.

One side effect might be noticed. The data this program provides might discourage you from borrowing money these days. The amount of interest you pay with interest rates up around 20 percent is truly frightening!

You have 195 program steps left when this program is in memory.

Future

It will take about 25 seconds, using this program, to find out the interest rate required to accumulate a given sum over a stated time period at specific payment amounts. The manual points out that these calculations are sometimes referred to as "sinking fund" calculations.

You can work these types of problems by having the computer determine the rate, payment amounts, number of payments, or the future value. This program provides a quick way for you to check up on how your IRA or other retirement plan is working out.

You will have 222 programming steps available with this program in memory.

Bonds

It takes about 20 seconds to find the price of a coupon bond once you have inputted the value at maturity, the number of years to maturity, the coupon value and the bond yield percentage.

Alternately, you can enter the current bond price, the maturity and the coupon value. It can take a number of minutes for the little PC to pump out the answer for this type of calculation. Thus, every 15 seconds or so during this operation, the computer flashes the message "*** COMPUTING ***" on the display so that you will know it is doing something useful! A sample problem to determine the yield of a bond having a 20 year maturity took approximately 7 minutes of computer time. Ah well, if you are one of the lucky few who has little else to do but sit around and clip bond coupons.... Of course, you can always be doing something else while the machine cranks away. Remember, these programs give two little beeps when the answer is ready. You may be surprised just how far away you can be from the machine and still hear those beeps — even in a noisy office environment.

You still have 424 programming steps left in the machine when this program is in memory.

Internal Rate of Return

It takes about 12 seconds to determine the present value of an investment after giving the PC the future value, number of years to maturity, the annual return and the rate of return.

Alternately, you can find the internal rate of return after inputting present and future values, the number of years over which the investment is being made and the annual rate of return. When this calculation is done over a number of years it takes some time for the program to crank out the answer. During the process the display flashes the message "*** COMPUTING ***" every 8 seconds or so. In a test problem it took approximately 4-1/2 minutes to solve an IRR problem projected over a five year period. It took roughly 5-1/2 minutes to perform the same calculation projected over a 10 year period.

You have 422 program steps left when this program is in memory.

Compound Interest

It takes about 8 seconds to find the earned rate after inputting the present and future values, number of periods per year and number of years over which a fund is deposited.

This program also enables one to determine the future or present value of a fund or the number of compounding periods required to reach a maturity sum.

You have 418 program steps available when this program is in memory.

Depreciation

It takes roughly 9 seconds to get the depreciation figure on an item using the straight line method.

The same calculation using the double declining schedule requires about 10 seconds.

Or, in about the same amount of time you can calculate depreciation using the sum of years-digits method.

The program leaves room for 423 program steps.

Summary

If your time is worth $5.00 or more per hour and you are a businessman or investor, this package is probably worthwhile.

While there is nothing fancy about the programs — indeed the programs are little more than straightforward implementations of common formulas — you would be hard pressed to locate the formulas, write them up in suitable program form and enter them into the computer in a half-hour or so. If it took you more time than that (per program) you might as well buy this package. What you are really buying is the convenience of not having to create and type in the programs.

The only real complaint we have about the package is that the programs are not really compact. This can not really be classified as a "fault" as it is simply a choice made by the package designers that we disagree with. The designers obviously made the decision to have the programs easy to use, with the user being cued at every step. This is certainly a legitimate philosophy and one that many beginning computer users applaud. However, the drawback is that you have to spend more time loading each program as you need it. It would be nice if three or four of these closely-related routines could be combined into one program. This might well be possible at some sacrifice in cueing the user, etc., *which could be compensated for by a more detailed instruction manual.* This is especially so since a number of the programs are similar in function and some leave a fair amount of memory unused. Some good subroutining might do the trick. In any event, it might be something to strive for in the future. From a practical viewpoint, a major at-

traction of a PC is its portability and convenience. These assets are seriously compromised when one has to carry a slew of paraphernalia (cassette interface, tape player, cassettes) around and spend five minutes or so diddling to put a different program in memory. The compactness of programs on such a machine is certainly a valid design criteria for sophisticated users.

Another solution to this aspect would be for Radio Shack — or anyone else for that matter — to come up with a system that would enable programs to be saved/loaded a lot faster. With the limited amount of memory in this machine it should be feasible to store all the contents on a small magnetic card or strip. Such a peripheral could greatly ease the task of changing the machine's function from moment-to-moment.

All-in-all we would give the Business Finance Program Package a rating of 6-1/2 on a scale of 10. Anything above a 3 on our scale is probably a worthwhile purchase for the average user!

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ALARM CLOCK PROGRAM

There you are on a sales trip. You stop at your favorite low cost motel and get ready to catch forty winks. Suddenly you realize you forgot your trusy alarm clock. Your low cost motel doesn't offer a wake up service. What will you do? What will you do!?

But of course, you wouldn't travel without your trusty PC. So, grab it out of your traveling briefcase and stuff this quickie program into it. Presto, you will have time in your hands — or at least something close enough to it for you to catch those forty winks without fear of sleeping beyond your next sales meeting.

```
500 INPUT "ALARM TIME (HH.MM)? ",B:G=INT (B):L=(B-
    INT(B))*100
510 INPUT "CURRENT TIME (HH.MM)? ";A:H=INT(A):M=
    (A-INT(A))*100:S=0
520 PAUSE H;M;S:IF H<>G THEN 550
530 IF M<>L THEN 550
540 PAUSE H;M:BEEP 3:GOTO 540
550 S=S+2:IF S<60 THEN 520
560 S=0:M=M+1:IF M<60 THEN 520
570 M=0:H=H+1:IF H<24 THEN 520
580 H=0:GOTO 520
590 END
```

We will skip a tutorial analysis of this program. It should be pointed out, however, that the timing could vary slightly from unit to unit or even upon the condition of your batteries. We found the program accurate to within about two minute per hour. That is close enough provided you don't take excessively long naps! Also, take note of the fact that the clock loses track of time once the alarm goes off.

We would be interested in hearing from those of you that implement the program. How accurate was the timing on your unit? We will report on the census if we get enough responses to make it interesting.

Can someone come up with a more sophisticated version of the traveling alarm clock?

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HOT AIR

Have you heard about the Panasonic/Quasar HHC (Hand Held Computer) units? Looks like someone sure wants you to hear about them. They have been receiving a lot of coverage in the popular press and trade magazines. There was even a big spread on the units in the January, 1981, issue of BYTE Magazine....

It seems the basic unit contains a real 6502 microprocessor running at a 1 MHz clock speed. It is reportedly equipped with a special "power-down" control circuit that minimizes current drain when the computer is not in actual use. Nickel-cadmium batters, which are rechargeable, enable the unit to run for a number of hours in portable use.

The "hand held" CPU portion has a QWERTY style keyboard and a 26 character liquid crystal display on its 9 inch by 3-3/4 inch top surface. The unit is reported to be about 1-1/4 inch thick. The display is said to handle upper and lower case characters. The keyboard has 2 key rollover protection. Weight is claimed to be 14 ounces.

Supposedely built into the HHC is an operating system including a 4-function calculator, editor, clock, and an electronic filing system. This package is apparently included on a 16K ROM that comes with the unit. There is also supposed to be some RAM included in the basic unit — at least enough to provide 500 or so characters of storage for the user in the basic unit. Indications are that RAM can be expanded up to 4K bytes in the HHC itself. Similarly, ROM is expandable to as much as 64K bytes in the basic unit when chips of projected capability become available in the future. It is also said that the machine will be capable of addressing up to 4 megabytes of RAM and/or ROM memory in external modules!?

The HHC will also be equipped with an audible beeper having the capability of emitting sounds over a 4 octave range.

A whole slew of plug-on extension modules are planned to support the HHC. These include RAM and ROM memory modules, a cassette interface, a video display module with color graphics capability, and a 16 character-per-line miniature printer. All of these devices are said to be designed so that various configurations will fit comfortably in an ordinary size briefcase.

No reliable pricing information on the Panasonic HHC has been obtained to date. However, industry sources have reported estimates ranging from $400.00 to $800.00 for the basic HHC unit.

Though reports, press releases, and comprehensive articles describing these units abound in the press, don't hold your breath waiting for delivery. After earlier rumors that the devices might be available in the latter part of 1980, it didn't happen. The latest word we were

able to obtain, directly from Panasonic's marketing department, was that they would not be available until at least "mid-year" 1981!

Better keep working out on that little TRS-80 PC, friends. As they say, a bird in the hand is worth two in the bushes....

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FROM THE WATCH POCKET

Adaptations of programs for the TRS-80 PC are popping out of the woodwork in short order. Page 182 of the January, 1981, issue of BYTE Magazine has a complete program that calculates discrete-Fourier-transforms. We loaded the program into memory and checked it out. It appears to work like a champ. There is sufficient memory left with the program installed for a good number of waveform points to be analyzed.

Page 184 of the same issue has another program that computes the time-domain response of systems using a given transfer program.

Both of these programs should be of considerable interest to engineers and technicians as well as scientists in a variety of disciplines.

It is nice to see this kind of quality "stuff" springing up so rapidly for these little PCs!

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SHARE YOUR CREATIONS

What are you doing with your pocket computer? What kinds of application programs have you cooked up? How are you customizing your unit for your own use? Have you picked up any operating time-savers, programming tips, short cuts or technical information that might be of use to others with similar interests?

If you answer "yes" to any of the above questions, you are probably in a position to please a lot of people (our readers!) as well as earn some rewards for yourself.

What kind of rewards? How about hard cash. Plus the recognition and respect of your peers that comes from being published in a discerning medium.

If you are interested in these kinds of rewards, then hurry up and get busy! Write up your ideas. Send us listings of your programs. Tell us what they do, how they operate, how to use them, and explain their practical applications.

It doesn't hurt to assume a tutorial stance. Tell others how and why you developed a program. Explain the reasoning behind your programming techniques.

If your submission is good and we accept it for publication, you will hear from us within four weeks. If it is not up to our standards or we have already obtained similar material, we will endeavor to promptly return your material *provided you include a self addressed stamped envelope for that purpose.* We are careful, but we cannot assume responsibility for submitted materials. The best safeguard is to make a copy for yourself before submitting material to anyone.

Get on our list of approved authors while we are still young and growing. The time for action is now!

Article submissions should be addressed to.

PC NEWSLETTER EDITOR
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THE TAX MAN COMETH

It is that time of the year again. Uncle Sam is ready to take his bite out of everyone's pocket.

If you run a small business, you know that he takes more than just coins out of your pocket. He also takes a lot of time out of your life! You have to calculate witholding and FICA taxes for all your employees every week, keep summaries, make out W2 forms at the end of the year, file quarterly 941 forms, etc., ad-nauseum.

Well hang in there pard'ner. We have help coming for you in the next issue of PC NEWSLETTER. Yep, believe it or not, we will be publishing an incredible program that fits in the TRS-80 PC. It will calculate federal witholding tax, FICA, provide an option for other deductions, and present net pay for virtually any wage earner on your payroll. We think you are going to be amazed at how such a powerful program could be fit into such a small computer.

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